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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/499,014	02/04/2000	Dae-Young Kim	CX020003	9613

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MOTOROLA INC  
AUSTIN INTELLECTUAL PROPERTY  
LAW SECTION  
7700 WEST PARMER LANE MD: TX32/PL02  
AUSTIN, TX 78729

EXAMINER

TRAN, KHAI

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/499,014

Applicant(s)

KIM ET AL.

Examiner

KHAI TRAN

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)                      18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      20) ☐ Other: \_\_\_\_\_

Art Unit: 2631

### DETAILED ACTION

1. The amendment D filed 11/21/03 has been entered. Claims 1-22 are pending in this Office action.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olafsson (U.S. Pat. 6,163,570) in view of Geile et al (U.S. Pat. 6,467,092).

Regarding claims 1, 10, 12, Olafsson disclose a PCM modem (200) as shown in Figure 2, including an analog modem (204) coupled to a digital modem (202), a method for controlling the transmit power of the analog modem. Olafsson fails to explicitly disclose steps of: detecting power level of the analog modem; and adjusting the transmit power level of the analog modem in accordance with the difference between the detected transmit power level and a desired transmit power level.

Geile et al disclose a method of improving modem performance by controlling transmitted power of the modem comprising steps of: detecting power level of the analog modem; and adjusting the transmit power level of the analog modem in accordance with the difference between the detected transmit power level and a desired transmit power level (the abstract recites that a steps of measuring power levels, comparing the power levels with a nominal power level, and adjusting or correct for large variations between the measured power level and the nominal power level). It would have been obvious to one having ordinary skill in the art at the time the invention

Art Unit: 2631

was made to detect and adjust or lower transmit power level after comparing the transmit power level and a desired transmit power level in order to satisfy a transmit power required by FCC.

Geile et al also disclose wherein the detecting and the adjusting are performed during design of a constellation (col. 42, lines 41-63).

Regarding claims 2-3, Olafsson also discloses that a transmit power verification procedure and scheme enables and accurately verifies the transmit power of a signal point constellation set regardless of the computational resolution of the components used in the two modem devices (col. 2, line 58 to col.3, line 8). In order to verify the transmit power levels sent from the one modem to another modem, therefore, the transmit power is inherently set by either one of the modem devices (i.e., the analog modem or the digital modem).

Regarding claim 4, Olafsson discloses the PCM modem system adjusting the power level of the analog modem by transmitting mapping parameters including the equivalence classes used in the analog modem and wherein the transmit power level is proportional to the number of equivalence classes (col.7, lines 41-59, and col.8, lines 24-45, i.e., the modem 202 may lower the transmit power limit to ensure that its computational precision does not cause an erroneous acceptance or rejection of training points or a signal point constellation set designed by modem 204).

Regarding claim 5, Olafsson discloses wherein the digital modem sets the analog modem transmit power by changing the number of equivalence classes

Art Unit: 2631

employed (col.7, line 42 to col.8, line 10, i.e., a power calculation element 242 computes the total average transmit power of the signal point constellations in accordance with the designated power formula 240 and in a similar manner as transmit power calculation element 222 (resident at modem 202), also see col.10, line 58 to col.11, line 3)).

Regarding claim 6, Olafsson further discloses wherein the digital modem estimates the transmit power of the analog modem during a startup mode (col.8, lines 11-45).

Regarding claim 7, Olafsson discloses the step of transmitting the difference between the detected power level and the desired power level to the digital modem for use by the digital in changing the number of equivalence classes employed, thus to adjust level of the analog modem transmitter (col.7, lines 41-59, and col.8, lines 24-45)

Regarding claim 8, Olafsson also discloses wherein the adjustment of the transmit power level of the analog modem is such as to maintain the transmit power level within FCC set limits (col.5, lines 23-35, i.e., the transmit power level with a regulatory limit -12 dBm0 FCC limit).

Regarding claim 9, Olafsson does not explicitly disclose that the adjusted transmit power level at the analog modem optimizes the PCM modem system by minimizing echo power to minimize noise components due to echo cancellation and by minimizing non-linearities and downstream performance degradation. However, Olafsson discloses that the transmit power level is adjusted at regulatory limit, such as

Art Unit: 2631

the -12 dBm0 FCC (col.8, lines 24-45). Therefore, the adjustment of the transmit power level inherently minimizes the noise signal and also reduces the error signal.

Claims 10-11 are similar to claims 1-3. Therefore, claims 10-11 are rejected under a similar rationale.

Regarding claim 13 is similar to claim 1. Therefore, claim 13 is rejected under a similar rationale.

Regarding claim 14, Olafsson also discloses the constellation being designed by the digital modem (see Fig. 1).

Claims 15-16 are similar to claims 4-5. Therefore, claims 15-16 are rejected under a similar rationale.

Claims 17-20 are similar to claims 1, 4 and 5. Therefore, claims 17-20 are rejected under a similar rationale.

Claims 21-22 are similar to claims 1, 10 and 12. Therefore, claims 21-22 are rejected under a similar rationale.

### ***Conclusion***

**3. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 308-9051, (for formal communications intended for entry)

**or:**

Art Unit: 2631

(703) 308-6743, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Khai Tran** whose telephone number is **(703) 305-1876**. The examiner can normally be reached on Monday-Thursday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chi Pham**, can be reached on **(703) 305-4378**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.

  
**KHAI TRAN**  
**PATENT EXAMINER**

**KT**  
**February 6, 2004**